Amendments to the Specification

Please replace the first sentence of paragraph [0015] on Page 6 of the specification as filed with the sentence set out below.

[0027] U.S. Patent Application Serial No. 10/023,258, entitled "Slurry Bubble Reactor Operated in Well-Mixed Gas Flow Regime," now issued as U.S. Patent No. 6,914,082, discloses a preferred operation for slurry bubble columns for use in Fischer-Tropsch synthesis. That application is incorporated by reference herein in its entirety. The application teaches that a maximum reactor productivity—or a minimum reactor volume—can be achieved by operating a multi-phase reactor to be in the well-mixed gas flow regime, with a gas Peclet number less than 0.175, more preferably less than 0.15, and a single pass conversion ranging from 35% to 75%, wherein the inlet superficial gas velocity decreases with the decreasing of the reactor aspect ratio (*i.e.*, L/D ratio), and is preferably at least 20 cm/sec. Thus, for embodiments of the present invention involving Fischer-Tropsch synthesis, the reactor operation is preferably in the well-mixed gas flow regime. However, operating in this gas flow regime is not necessary to the present invention. Further, while the Fischer-Tropsch synthesis is a preferred embodiment of the present invention, other reactions carried out in slurry bubble column reactors may also benefit from the present invention.

Please replace the paragraph [0021] on Page 8 of the specification as filed with the paragraph set out below.

[0021] The presence of particles of the smallest sizes primarily comes from two sources: they may be present in fresh catalyst, or they may be generated during slurry bubble column reactor operation. As the slurry bubble column reactor operates, depending on the attrition resistance or structural integrity of the catalyst particles, catalyst particles may break down into smaller particles, some of which may be less than 20 microns. Particles of less than 20 microns are commonly referred to as fines, or sub-particles. It is preferable to remove these fines, as these fines can result in reduced separation efficiency of the larger particles from the slurry. Fines may be removed from fresh catalyst by sieving or other removal techniques that are well known in the

art. A method for removing such fines from an operating slurry bubble column reactor is described in U.S. Patent Application Serial No. 10/243,448, entitled, "Solid-Liquid Separation System," which is incorporated by reference in its entirety <u>and is now issued as U.S. Patent No. 6,833,078</u>. That disclosure teaches a method for removing fines, or sub-particles, by processing a first slurry stream from a slurry bubble column reactor through a first separation unit. The first separation unit produces a sub-particle rich slurry that is not returned to the slurry bubble column and a sub-particle lean slurry that is returned to the slurry bubble column. A second slurry stream may be withdrawn from the reactor for removing substantially all of the catalyst particles in a second separation unit to produce a liquid product. The catalyst particles are returned to the reactor in a more concentrated slurry. The separate removal of the fines in the first separation unit allows the second separation unit to operate more efficiently.

Please replace the paragraph [0028] on Page 11 of the specification as filed with the paragraph set out below.

[0028] Based on the foregoing Archimedes numbers and the physical properties of the system, a maximum particle diameter can be calculated from equation (3). For example, assuming for purposes of calculation and not by way of limitation that the catalyst particle density ~~was~~ <u>is</u> 2,000 kg/m^3, the liquid density ~~was~~ <u>is</u> 700 kg/m^3, and the liquid viscosity ~~was~~ <u>is</u> 0.0006 kg/m·s,.the preferred particle diameter to achieve a catalyst non-uniformity of less than 2 ~~would~~ <u>will</u> be about 160 microns. Other conditions being the same, if the catalyst particle density ~~were~~ <u>is</u> 3,000 kg/m^3, the preferred maximum particle diameter to maintain a catalyst non-uniformity of less than 2 ~~would~~ <u>will</u> be about 130 microns. Thus, the preferred maximum particle diameter may change based on the properties of the particular system. However, with the embodiment of the present invention, it is possible to determine the optimum upper catalyst particle size limit based on the specific system and the specific quantity of non-uniformity desired.